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ABSTRACT

A project continued activity to improve the occupational competency assessment program for evaluating and certifying vocational education teachers. Development of new testing was continued by Temple University, The Pennsylvania State University, and University of Pittsburgh. Workshops for test developers were conducted to ensure standardization of the end product. Review of completed products and use of validation studies permitted improvement in individual tests. Statistical studies, using candidate testing results from the three universities, provided normative data that can be applied with greater reliability in establishing scoring parameters. Quality testing instruments were made available through centralized printing and distribution by National Occupational Competency Testing Institute (NOCTI). The entire Pennsylvania test bank was transferred to NOCTI who would provide management, including printing and dissemination, storing, norm accumulation, revision, and update. Continuation of training of individual examiners through a centralized workshop activity ensured that standardization processes and practices were known to all examiners. Effort was placed on publicizing the program throughout the state. A national seminar of NOCTI member states (with twenty-two states represented) was hosted to facilitate sharing test review and development with other states. (Tables and project materials, amounting to over one-half of the report, are appended.) (YLB)

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THE
PENNSYLVANIA
STATE
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DEPARTMENT
OF
VOCATIONAL
EDUCATION

FINAL REPORT

PDE OCCUPATIONAL COMPETENCY ASSESSMENT PROJECT - 1979

GERALD W. FUNK

Pennsylvania Department of Education
Bureau of Vocational Education
(Project No. 94-9013)

CE 024 701

VOCATIONAL — TECHNICAL EDUCATION **Research Report**

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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OCCUPATIONAL COMPETENCY EVALUATION
MONOGRAPH, Number 10 September 1979

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FINAL REPORT

PDE OCCUPATIONAL COMPETENCY ASSESSMENT PROJECT - 1979

PROJECT NUMBER 94-9013

DISCLAIMER

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By

Gerald W. Funk

September 1979

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PREFACE

This report covers the continuation of activity to improve the occupational competency assessment program in Pennsylvania. Many diverse requirements were addressed along with new and sometimes different activity. When all activity is considered it represents a program that provides an important service function, i.e., the first step in acquiring vocational teachers in Pennsylvania.

As with preceding years, the quality of the test instruments was reviewed and new testing developed. Changes and updates were made to many tests, through input of examiners and candidates, with considerable data developed at the examiner workshop.

The NOCTI national seminar was held at Penn State, in conjunction with the examiner's workshop. Great interest in our program was expressed by participants from the 22 states represented. Their exposure and involvement with us, along with copies of our guidelines and forms provided to participants should materially assist in improving occupational competency assessment in other states. Many participants had considerable discussion with our test center coordinators as well as individual examiners, in which they attempted to identify solutions to problems in their states.

Our involvement with NOCTI continued at an even higher level than in previous years. Our visit to NOCTI in July 1978 permitted greater understanding of their operating conditions. With NOCTI acquiring 9 of our tests for national use, we explored and consummated transfer of all of our Pennsylvania test bank (28 titles) to NOCTI.

We encountered great difficulty as a result of NOCTI changing performance test scoring but using the established data base. This generated extensive statistical studies for us until we found a solution. This, however, will be of temporary nature until a new data base is established.

Cost studies for individual test centers resulted in funding support by the Bureau of Vocational Education. This will be a continuing activity to attempt to identify changes or adjustments that will reduce the overall costs of the program.

ACKNOWLEDGEMENTS

The cooperation of many persons was essential to the activities encompassed by this report. The test center coordinators at the institutions, Dr. Jon Hunt at Temple University; Mr. Harry Kraft at The Pennsylvania State University; Mr. John Lipps at University of Pittsburgh and Dr. Thomas O'Brian at Indiana University of Pennsylvania, provided assistance and personal involvement in meetings and workshops as well as their test center activity. Dr. Jerome Kapes formerly at Lehigh University and now at Texas A & M University, continued to provide statistical service. He evaluated and interpreted results of our validation studies and was of considerable assistance in resolving our scoring dilemma when NOCTI changed their evaluation format. Mr. Ken Swatt, Chief, Development Services, Bureau of Vocational Education, provided significant guidance and assistance. John Brandt, Supervisor of Trade and Industrial Education, Bureau of Vocational Education, provided constant guidance and counsel. Other Bureau of Vocational Education staff from Dr. John Struck, Director; Mr. Paul Schalles, Assistant Director; Dr. T. Dean Witmer, Chief, Program Development Section; Program Supervisors and Assistants, Secretaries and field staff all were helpful and supportive in the conduct of this project.

Dr. Wallace Maurer and Mr. Vance Edinger, Bureau of Teacher Certification, participated in the project and provided considerable expertise to bear on solving difficulties relating to certification.

The contribution of The Pennsylvania State University, Division of Occupational and Vocational Studies, cannot be overemphasized. Support and encouragement was so much in evidence at all times. Of special significance was the unstinting support of the secretaries and graduate assistant who

worked closely with the project. Mrs. Mary Lovette, project secretary, who kept track of minute details and was instrumental in insuring that the project ran smoothly and was successful. Her contribution cannot be overemphasized. Mrs. Kris Sefchick, Penn State test center secretary, with detailed knowledge of the activity; Mr. William Matten, Graduate Assistant, who did yeoman work in insuring that workshops were successful. The effort of these and the other faculty and staff in the Division of Occupational and Vocational Studies in assisting as well as permitting considerable latitude of action made the job easier and more enjoyable. Without the support of these plus that of many other persons the task would have been impossible. Sincere thanks is expressed to all.

Gerald W. Funk

REPORT OF PROJECT NUMBER 94-9013

P. D. E. Occupational Competency Examinations

July 1, 1978 - June 30, 1979

INTRODUCTION

Successful completion of occupational competency assessment is mandated by the Pennsylvania Board of Education as a requirement for vocational teacher certification in the trade and industrial program and for certain occupational areas of other vocational programs. This is viewed as necessary to insure that those persons who enter the classroom as a teacher are in fact competent in the occupation they wish to teach. The program of competency assessment would appear to be successful, in that a consistent pattern of successful candidates has emerged. To be admitted to the program, one must have adequate work experience beyond the learning period to establish competency in the occupation to be taught. Even with these credential requirements, we find a failure rate of approximately 25%, indicating that the test is screening those persons of poorer occupational preparation and insuring to a greater degree, the competency level of those persons entering the classroom.

This project was designed to provide the management activity of the overall occupational competency assessment program in support of the vocational education activity in the state of Pennsylvania and meets teacher education priority one. This includes activity such as use of community resources and recruitment of vocational teachers. Teacher education priorities two and three are also supported by this project.

The project was funded under project Number 94-9013, from July 1, 1978 through June 30, 1979. Objectives were:

1. To serve as the Pennsylvania Coordinator of Occupational Competency Assessment and to coordinate activities of the occupational competency assessment program with Temple University, University of Pittsburgh, The Pennsylvania State University, Bureau of Vocational Education and National Occupational Competency Testing Institute and such other universities as may be assigned.

2. To maintain a master file of Pennsylvania developed and administered examinations and to reproduce and distribute examinations to the using institutions and to the Bureau of Vocational Education.

3. To do a continuous item analysis of the results of all Pennsylvania developed and administered occupational competency examinations and to publish normative values for examination scoring.

4. To provide in-service training for the test developers for institutions developing tests.

5. To provide in-service training for Pennsylvania examiners of occupational competency examinations.

6. To identify occupational competency examinations requiring revision or development through review of statistical studies.

7. To validate occupational competency examinations developed in the 1978-79 school year.

8. To conduct a continuous study of the occupational competency evaluation program to identify changing needs and to recommend areas for improvement.

Coordinate OCE Program Activity

Total program activity was coordinated through meetings, personal visits, workshops, conferences and frequent contact with the test center coordinators at each institution. Periodic meetings were held at different universities, with meeting location being centralized at the Bureau of Vocational Education for the second half of the reporting period. Use of a central meeting point is considered of greater convenience to all participants.

A new publication "Approved Vocational Course Descriptions for Pennsylvania Secondary Schools" was completed, printed and distributed to all schools. Presentations on use of the manual was provided to Pennsylvania Department of Education staff responsible for school evaluations as well as the three Bureau of Vocational Education field staffs and to regional meetings of vocational administrators. The publication includes pertinent program, occupational competency and certification data required in the conduct of approved vocational programs and is used as official guidance for the conduct of vocational programs.

Greater involvement with the National Occupational Competency Testing Institute (NOCTI) developed during this reporting period. One of the earliest items was discovered with results of fall 1978 performance testing. A far greater failure rate than that which we were accustomed was experienced by the test centers. Review of the situation revealed that the difficulty was caused by NOCTI changing their performance evaluation format and applying the statistical base of the earlier format. We initially applied a temporary corrective factor by using the average performance score as the acceptable value. This was found to be less than satisfactory, therefore a further adjusted cut-off value of one standard deviation below the mean was adopted. This value was still used at the close of this report, however there appears to be long range difficulty with this approach which will require further study to arrive at a long range solution.

A second major activity with NOCTI was the transfer of the entire Pennsylvania test bank to NOCTI, to become national tests. The transfer of the test bank was initiated by NOCTI to permit them to acquire nine tests. This was expanded to include the total Pennsylvania test bank, in which

NOCTI would provide test bank management to include printing and dissemination, scoring, norm accumulation, revision and update. It is expected that considerable additional effort and involvement on our part will be necessary to complete all requirements in converting the instruments to national test status. Actual transfer of the instruments took place on June 15, 1979. The master list of all testing is shown on Table I.

Review of test center administrative structure and cost effectiveness involved considerable study and time. Details of activity from the time a candidate makes inquiry until testing results are disseminated have been thoroughly reviewed and adjusted. Recommendation was made to permit greater secretarial involvement in routine activity and to free the faculty member serving as the test center coordinator from all activity not requiring direct coordinator involvement. Reduction in operating costs should appear as a result of recommendations implemented.

Assessments for the period of this report number 357. This is similar to activity of the previous year and while giving the appearance of a downward trend when compared to two years prior activity, one should consider the cyclic pattern of test activity. The overall average shows that we might expect 369 assessments per year for the entire state, however it appears that there may be a larger than usual turnover of teachers for the 1979-80 school year. Averaging assessment figures would seem more appropriate when preparing plans and conducting studies. See Tables II, III and IV.

NOCTI National Seminar

The annual NOCTI seminar for state representatives was hosted by Pennsylvania with activity conducted at The Pennsylvania State University. Representatives from 15 states attended the two day program with 34 persons attending. The seminar was held in conjunction with the Occupational

Competency Examiner Workshop to permit participants to gain knowledge of this part of our OCE activity. Information gained may be used in reference to conducting similar activity in other states. A highlight of the seminar was a banquet presentation during which Dr. William A. Williams, Professor Emeritus of Industrial Education, The Pennsylvania State University, covered vocational education and the development and evolution of occupational competency testing in vocational education.

Summer Test Cycle

Summer testing was scheduled at each test center to permit test completion for persons expecting to become teachers in fall 1978. The test schedule was different for each test center, but with a short time period in which to complete testing, there did not appear to be a great difference in the schedule. All persons who applied to the test centers were tested at the scheduled fee of $150.00. In some cases, school administrators did not become aware of resignations until after summer testing. These people were scheduled for fall 1979 testing. Review of results shows that summer testing permits many new teachers to enter the classroom on a vocational-intern certificate, rather than an emergency certificate. This certification status for new teachers is desired at all levels of vocational education and summer testing is key to this accomplishment. It is recommended that summer testing continue to be offered for this purpose.

Test Reproduction and Dissemination

All test materials used by test centers were printed at The Pennsylvania State University and distributed to the test centers as they were requested. Distribution was by United Parcel Services generally, to hold costs down, with special requests being shipped through postal facilities. It was

found that test center requests could be accommodated with little difficulty, even though special requests sometimes required 'breaking the printer' schedule to print our materials on short notice and special handling and hurried trips to the main postal facility in town to meet a postal dispatch schedule. This latter requirement is a necessity to support test center needs, particularly when testing of prospective teacher is not made known to a test center in the normal schedule of activity. The test centers, in attempting to serve vocational education teacher placement, sometimes find it necessary to request special service, of this kind.

Norm Data

Written test optical scan sheets for each person completing a Pennsylvania test were submitted by each test center. These were generally copies of the original scan sheets, which necessitated copying to a clean sheet that could be processed at the examination services center. All data accumulated was processed through item analysis to obtain current NORMs for test center use. It is essential that this data is current, since a determination of pass/fail for a candidate is based on the mean value computed from the population tested. Current NORM values are shown on Table V.

Validation Studies

Only one full test had been developed which required processing through validation studies. Review of the test bank revealed that two additional tests that had been developed previously had not been fully validated. These are titles in which there are less than three programs in the state and it was for this reason that they had not previously been completed. Difficulty was encountered in locating persons to complete the test, and limited data was obtained because of so few programs being conducted in the state. Effort

to overcome the lack of data was believed necessary however, and since only one full test was included in the study, ample time was available to address the deficiencies of the other two titles. Statistical data from the validation studies will be published separately.

Test Developers

Persons developing examinations at Penn State were provided workshop activity in test development processes. This covered the full range of test development requirements outlined in the publication "OCE Examination Development Guidelines". The initial meeting at which this activity was conducted was held at Harrisburg-Steelton-Highspire AVTS in Harrisburg, PA on Jan. 27, 1979. An additional meeting was held at Penn State to review these requirements with the persons not present at the Harrisburg meeting.

Test developers at the other two universities were provided review of requirements by the test coordinators at the individual institutions. This was considered necessary and appropriate as attempts to schedule the activity in which the persons would be centrally assembled were not successful. Results of this activity will be realized through the input of tests developed and the amount of additional work that may be required. The entire process will be evaluated to determine the best approach to prepare test developers.

Examiner's Workshop

The value of conducting an annual workshop in examining practices and performance evaluation was realized several years ago. Our original goal was, and still is, to have each of our 300 plus examiners from throughout the state attend a workshop in which the entire examination could be reviewed by each examiner; where several examiner's in like occupational

titles could discuss examining practices as they individually understand it; and to arrive at a standardized approach to the process. While we originally conducted a workshop with a large attendance, we subsequently reduced the attendance to 60 examiners, which has proven to be an appropriate number for a workshop of this kind.

The workshop this year was designed for 60 examiners, with each of the three test centers authorized space for two examiners in ten titles. Experience has shown that all spaces are not filled by the test centers, so arrangements were made to have the test centers also allot spaces for all examiner's not previously attending, regardless of occupation.

Pre-registration was considerably reduced, of which one reason given was that some schools had delayed closing due to making up lost days for snow and strikes. A greater number of persons than could be accommodated were contacted and 56 responded affirmatively. Another difficulty was encountered in that fuel shortage was prevalent at the time the workshop was scheduled and a number of persons who had pre-registered failed to show because of the fuel shortage. This will have to be considered for future workshops and arrangements attempted to car pool or to use public transportation.

Occupational titles used in the workshop represented both NOCTI and Pennsylvania developed testing. All of the Pennsylvania testing had been transferred to NOCTI prior to the workshop, but not all of the tests had been converted to the NOCTI format. The Pennsylvania performance evaluation had been converted to the current NOCTI style for all except two titles, however. Because of the recent transfer of testing, some tests used were obtained from Pennsylvania files with a large number supplied by NOCTI.

The National Occupational Competency Testing Institute (NOCTI) as well as the Pennsylvania test centers participated by presenting pertinent topics and working with the occupational groups. State representatives attending the National Occupational Competency Seminar, hosted by Penn State, participated in the morning session of the workshop. They were given an opportunity to discuss occupational competency practices with examiners and to become acquainted with the conduct of the workshop and the goals expressed.

Each of the written examinations were reviewed by examiners, in which they were asked to provide feedback on their understanding of the condition of the test. Comments will be used to improve the tests where appropriate.

The larger time was used to review the performance test. As in previous workshops, examiner's had the opportunity to discuss all parts of the test and to obtain views that others may have on each item. Standardization should be enhanced through the interchange of ideas and test improvement should result through the suggestions submitted. All comments were provided to NOCTI to permit them to make changes to tests as appropriate.

Considerable effort was made to review evaluation practices and the evaluation summary sheet introduced by NOCTI within the past year. Advantages of the new form and the method of evaluating competencies were favorably received and should permit greater objectivity in arriving at test results.

Individuals who participated and presented were

Dr. Frederick Welch	The Pennsylvania State University
Mr. John Brandt	Bureau of Vocational Education
Dr. Ray Klein	NOCTI

Dr. Jon Hunt	Temple University
Dr. Thomas O'Brian	Indiana University of Pennsylvania
Mr. John Lipps	University of Pittsburgh
Mr. Gerald W. Funk	The Pennsylvania State University

Full details of preparation for and the conduct of the workshop are shown on Attachment 1.

Bureau of Certification Coordination

Coordination of OCE activity with the Bureau of Teacher Certification continued to be an effective process in achieving the goals established. Many problems, highly individualistic, were discussed throughout the year with resolutions usually achieved in short time. Having a Bureau of Teacher Certification representative sit on the OCE consortium has eased the number of problems and has contributed materially to preventing situations exceeding their limited parameters. Coordination of activity at the working level is recommended for continuation.

Examination Development

The test bank is, and has been, under constant scrutiny. Those titles showing greater use and greater technological change were identified and prioritized for test development consideration. Funds available for this development, under separate projects, were somewhat less than originally expected and resulted in a reduced schedule. Consideration was also given to changing priorities when it was determined that applicants rarely failed the oral assessment.

It was agreed that test development funds should be used to prepare performance examinations in occupations showing greater use for which there were no examination materials. Each of the institutions developing examinations were also assigned five pre-test instruments and five candidate experience checklists for development.

Test development assignments were:

* University of Pittsburgh

Performance Test, Pre-Test and Candidate Experience Checklist

17.0900	Commercial Photography
17.2391	Mine Equipment Maintenance
17.1003	Heavy Equipment - Construction

Pre-Tests and Candidate Experience Checklist

17.0700	Commercial Art
17.1200	Diesel
17.1401	Industrial Electricity
17.1007	Plumbing
17.2306	Welding

* Temple University

Performance Test, Pre-Test and Candidate Experience Checklist

17.3301	Dressmaking
17.1100	Custodial Services
17.9904	Vending Machine Repair

Pre-Tests and Candidate Experience Checklist

17.9905	Material Handling
17.1005	Painting and Decorating
17.3390	Power Sewing
17.1503	Radio/TV Repair
17.3100	Small Engine Repair

* The Pennsylvania State University

Performance Test, Pre-Test and Candidate Experience Checklist

17.2802	Law Enforcement
17.0701	Interior Decorating
17.0303	Auto Specialist (Service Station)

Pre-Tests and Candidate Experience Checklists

17.1400	Electrical Occupations
17.1501	Electronic Communications
17.0102	Heating
17.1004	Brick Masonry
17.1093	Masonry Occupations

Continuous Study of OCE Program

The Pennsylvania Occupational Competency Assessment Program is under constant scrutiny to identify trends and changing patterns; to develop improved techniques and instruments; to determine and implement management improvements. Greater emphasis was placed on secretary involvement at individual test centers to permit release time of the faculty coordinator for other activity. Test center requirements and personnel responsibility are shown on Attachments II and III.

Cost studies revealed that NOCTI could provide test bank custody and full services at only a slightly higher cost than for us to manage it. Additional factors such as national statistics and national visibility were additional considerations in moving our entire test bank to NOCTI. Another advantage in making this move is to reduce time and workload at the state level and direct resources into other productivity.

Working arrangements with the state of Michigan will provide a sharing of test development and review wherein we may benefit from resources that Michigan applies to test review and development. This sharing of responsibility should reduce our time and funds allocation to maintain a valid and reliable test bank.

New performance evaluation summaries were developed for Pennsylvania tests to match the change implemented by NOCTI. Acetate overlays to be used as a key for performance scoring were provided to the test centers.

These and other management improvement actions of recent years are shown below.

Management Improvement Actions

Standardize Test Development Practices
Standardize Test Instruments
Conduct Test Developer Workshops
Conduct Examiner Workshops

Standardize test administration
Establish state cut-off scores
Develop and update state policy manual
Develop and update Pennsylvania Department of Education publication "Approved Vocational Course Descriptions for Pennsylvania Schools"
Develop acetate overlay scoring keys
Develop pre-tests
Develop candidate experience checklists
Re-format examination instruments to national mode
Develop candidate "Release of Information Statement"
Centralize test management
Establish consortium meetings
Validate new test instruments
Review test bank status annually
Develop schedule to update test instruments
Develop master listing of examinations approved for Pennsylvania use
Prepare consolidated listing of annual OCE assessments
Prepare cost studies
Prepare annual OCE projections
Publish state approved statistical measures

Summary

The occupational competency evaluation program serves the important aspect of providing the public schools with competent vocational teachers and is a vital part of vocational teacher education. This testing program is the subjective and the most objective in all of the processes by which prospective teachers are evaluated. The activities described in this report express the interest and attention focused on these processes throughout the year. Development of new testing was continued by three universities; Temple University, The Pennsylvania State University and University of Pittsburgh. Workshops for test developers were conducted to insure standardization of the end product. Review of completed products and use of validation studies permitted improvement in individual test instruments. Statistical studies, using candidate testing results from the three universities has provided normative data that can be applied with greater reliability in establishing scoring parameters.

Quality testing instruments are now available through centralized printing and distribution by National Occupational Competency Testing Institute (NOCTI). Each university coordinator can provide immediate diagnostic feedback to candidates who are administered Pennsylvania developed tests.

Of considerable significance is the continuation of training of individual examiners, through a centralized workshop activity. This insures that standardization processes and practices are known to all examiners attending and assists in the long-range goal of all examiners in the state receiving training. An important added benefit resulting from the examiner workshop provides a review of the individual tests for adequacy and technological changes. This had not been possible, except on a limited basis, prior to this workshop activity.

Involvement with the National Occupational Testing Institute (NOCTI) resulted in a continuation of test improvement at the national level. NOCTI representatives participated in the examiner workshop and provided detailed criteria for new performance evaluation which was introduced in 1978 on a national scale.

The entire Pennsylvania test bank was transferred to NOCTI in June 1979 with the agreement that they, NOCTI, would provide the same services and test bank management as with their original test bank. This action changes the test bank status to a national level. Continued dialog has resulted in strengthening both programs.

Considerable effort was placed on publicizing the program throughout the state. Presentations covering full details of the program were given to Bureau of Vocational Education staff and to Vocational administrators at separate meetings in the eastern, central and western regions of the state. Presentations were also given at The Pennsylvania Vocational Education Conference.

We hosted the national seminar of NOCTI member states, with 22 states represented. These representatives participated in our examiner workshop and were provided with Pennsylvania OCE materials to assist in improving the OCE program in their states. The state of Michigan has been the most active of the NOCTI member states in establishing their OCE program. We have continued to assist the Michigan program which has permitted development of a sharing of test review and development. This should reduce some of our workload in this area. We will pursue this activity with other states to attempt to further share this requirement.

Considerable effort and funding has contributed to a viable and quality program of occupational competency evaluation for Pennsylvania. A continued effort is needed to not only maintain, but to continually improve occupational competency evaluation, particularly to meet the needs of society and technological advances.

TABLE I

MASTER LIST OF TESTING

Table I

L - Lehigh A - Available
P - Pitt O - Not Available
PS - PSU
T - Temple Z - Licensure
X - Performance Only

Certificate Title	U.S.O.E. Code	Certification Title	Status	Form B NOCTI Test	Form P Pennsylvania Test	Pre-test Available	Recommended Number Candidates Per Examiner	Recommended for Set-up Fee	
Aeronautical Technology	16.0101	2501	O						
Air Conditioning	17.0100	2001	A	B		7/80	2/1	Yes	Use NOCTI Air Cond./Refrigeration
Aircraft Maintenance	17.0401	2503	Z						
Aircraft Engine Mechanic	17.040102	2504	Z						
Airframe	17.040101	2502	Z						
Appliance Repair	17.0200	2003	A	B		A	2/1	Yes	Use NOCTI Major Appliance Repair
Architectural-Design Tech.	16.0103	2105	A	B		A*	Multiple Numbers		*
Audio-Visual Communications Tech.	16.0691	2510	A		P	A	2/1		
Automotive Body & Fender	17.0301	2005	A		P	A	2/1	Yes	
Automotive Mechanic	17.0302	2007	A	B		A	2/1	Yes	
Automotive Specialist	17.0303	2028	X		P	7/79	2/1		
Automotive Technology	16.0104	2008	O						
Auto-Diesel Mechanic	17.0390	2025	O						
Baker	17.2901	2009	X		P	7/80	2/1	Yes	
Building Construction Occ.	17.1090	2014	A	B		A	2/1	Yes	
Building Trades Maintenance	17.1091	2013	A	B		A	2/1	Yes	
Business Machine Maint./Repair	17.0600	2015	A		P		2/1		
Carpentry	17.1001	2017	A	B		A	2/1	Yes	
Chemical Technology	16.0105	2101	O						
Civil Technology	16.0106	2103	A	B		O	3/1		
Commercial Art	17.0700	2019	A	B		7/79	2/1**		**
Commercial Photography	17.0900	2020	X		P	7/79	2/1	Yes	
Cosmetology	17.2602	2023	Z						

*Use Architectural Drafting

**May be Greater Ratio

L - Lehigh
P - Pitt
PS - PSU
T - Temple

A - Available
O - Not Available
Z - Licensure
X - Performance Only

Certificate Title	U.S.O.E. Code	Certification Title	Status	Form B NOCTI Test	Form P Pennsylvania Test	Pre-test Available	Recommended Number Candidates Per Examiner	Recommended for Set-up Fee	
Custodial Services	17.1100	2520	X		P	7/79	2/1		
Diesel Mechanic	17.1200	2025	A		P	7/79	2/1	Yes	
Drafting Design Technology	16.0121	2027	A		P	A*	Multiple Numbers		*
Drafting Occupations	17.1300	2027	A		P	A	Multiple Numbers		
Drafting, Architectural	17.1301	2032	A	B		A	Multiple Numbers		
Drafting, Mechanical	17.1302	2034	A	B		A	Multiple Numbers		
Dressmaking	17.3301	2029	X		P	7/79	2/1	Yes	
Electrical Construction/Maint.	17.1002	2031	O		P	A	2/1	Yes	
Electrical, Industrial	17.1401	2035	A	B		7/79	2/1	Yes	
Electrical Occupations	17.1400	2033	A	B		A	2/1	Yes	
Electrical Technology	16.0107	2107	O						
Electronics	17.1500	2030	A		P	A	2/1	Yes	
Electronic Technology	16.0108	2111	A		P	A**	2/1	Yes	**
Electronics Communications	17.1501	2110	Z			7/79			
Electro-Mechanical Technology	16.0109	2109	O						
Engineering Technology	16.0100	2104	O						
Environmental Control Tech.	16.0110	2113	A		P	7/80	2/1		
Fabric Maintenance Services	17.1600	2037	O						
Floor Covering Installation	17.1094	2074	O						
Foundry	17.2301	2039	O						
Graphic Arts	17.1900	2057	A	B		A	2/1	Yes	Use NOCTI Printing
Graphic Occupations	17.1907	2076	A	B		7/80	2/1	Yes	Use NOCTI Printing
Heating	17.0102	2040	A	B		7/79	2/1	Yes	

*Use Drafting Occupations

**Use Electronics

L - Lehigh
P - Pitt
PS - PSU
T - Temple

A - Available
O - Not Available
Z - Licensure
X - Performance Only

Certificate Title	U.S.O.E. Code	Certification Title	Status	Form B NOCTI Test	Form P Pennsylvania Test	Pre-test Available	Recommended Number Candidates Per Examiner	Recommended for Set-up Fee	
Heavy Equip. - Construction	17.1003	2044	X		P	7/79	2/1		
Hydraulics/Fluid Power	17.3290	2042	O						
Industrial Technology	16.0111	2112	O						
Instrument Maintenance & Repair	17.2100	2041	A		P	7/80	2/1		
Instrumentation Technology	16.0112	2115	O						
Industrial Maintenance Mech.	17.1092	2068	A			7/80	2/1	Yes	
Interior Decorating	17.0701	2050	A		P	7/79	2/1	Yes	
Law Enforcement Training	17.2802	2048	X		P	7/79	2/1	Yes	
Machine Shop Practice	17.2302	2043	A	B		A	2/1	Yes	Use NOCTI Machine Trades
Machine Tool Operation	17.2303	2043	O						
Masonry, Brick	17.1004	2045	A		P	7/79	2/1	Yes	
Masonry Occupations	17.1093	2054	A		P	7/79	2/1	Yes	
Material Handling	17.9905	2046	A	B		7/79	2/1	Yes	
Meat Cutting	17.2903	2058	O						
Mechanical Drafting/Design Tech.	16.0128	2106	A	B		A*	Multiple Numbers		*
Mechanical Technology	16.0113	2117	A	B		O	2/1		
Metal Fabrication	17.2392	2052	A		P	7/80	2/1	Yes	
Metallurgical Technology	16.0114	2119	O						
Metalworking Occupations	17.2300	2072	A		P	7/80	2/1	Yes	
Millwork & Cabinetmaking	17.3601	2047	A	B		A	2/1	Yes	
Mine Equipment Maintenance	17.2391	2530	X		P	7/79	2/1		
Nuclear Technology	16.0115	2120	O						
Optics	17.2103	2116	O						

*Use Mechanical Drafting

L - Lehigh
P - Pitt
PS - PSU
T - Temple

A - Available
O - Not Available
Z - Licensure
X - Performance Only

Certificate Title	U.S.O.E. Code	Certification Title	Status	Form B NOCTI Test	Form P Pennsylvania Test	Pre-test Available	Recommended Number Candidates Per Examiner	Recommended for Set-up Fee
Painting and Decorating	17.1005	2049	A	B		7/79	2/1	Yes
Patternmaking	17.9903	2051	O					
Petroleum Production	16.0116	2036	O					
Photographic Technology	16.0129	2020	O					
Plastics	17.2700	2053	O					
Plastic Technology	16.0699	2053	O					
Plumbing	17.1007	2055	A	B		7/79	2/1	Yes
Power Mechanics Occupations	17.0304	2066	O					
Power Sewing	17.3390	2070	A	B		7/79	2/1	Yes
Quantity Foods	09.0203	2059	A		P	7/80	2/1	Yes
Radio/Television Repair	17.1503	2061	A		P	7/79	2/1	Yes
Refrigeration	17.3000	2024	A	B		7/80	2/1	Yes
Research Laboratory Assistant	16.0690	2080	O					
School - Employment Coop. Ed.	17.9901	2361	O					
Scientific Data Proc. (Comp. Tech.)	16.0117	2121	A	B		A	2/1	Yes
Sheet Metal	17.2305	2063	A	B		7/79	2/1	Yes
Shoe Manufacture/Repair	17.3401	2065	O					
Small Engine Repair	17.3100	2067	A		P	7/79	2/1	Yes
Tailoring	17.3302	2069	X		P	7/80	2/1	Yes
Textile Production/Fabrication	17.3300	2071	A	B		7/79	2/1	Yes
Tool and Die Making	17.2307	2073	A		P	7/80	2/1	Yes
Tool and Die Design Technology	16.0192	2123	A					
Upholstering	17.3500	2075	X		P	A	2/1	Yes
Vending Machine Repair	17.9904	2016	X		P	7/79	2/1	
Welding	17.2306	2079	A		P	7/79	2/1	
Trade/Industrial, Other	17.9999		O					

TABLES II, III and IV

ASSESSMENT FIGURES

Table II

O. C. E. P. ADMINISTRATION FREQUENCY

FROM July 1, 1978 TO June 30, 1979

TOTALS FOR PENNSYLVANIA

3 Page Grand Total	357	88	149	41	14
TITLES	Total Candidates Assessed	Failures	NOCTI	Licensure	Credential Review
Air Conditioning/Refrigeration	9	3	9		
Aircraft Maintenance	1				1
Airframe-Aircraft Maintenance					
Aircraft Engine Mechanics	2				2
Appliance Repair	6	1			
Architectural Design Technology					
Architectural Drafting					
Audio-Visual Communications Tech.	1				
Auto Body	18	7			
Auto-Diesel Mechanic	1				
Automotive Mechanic	34	15	34		
Automotive Specialist	1				1
Baker	1				
Barbering					
Brick Masonry	5				
Building Construction Occ.	7	1			
Building Trades Maintenance	16	4	16		
Carpentry	24	7	24		
Commercial Art	5				
Commercial Photography	1				1
Cook/Chef	4				
Computer Technology	15	7	15		
Cosmetology	16			16	
Custodial Services	1				1
Sub-Totals - Page 1	168	45	98	16	6

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O. C. E. P. ADMINISTRATION FREQUENCY

FROM July 1, 1978 TO June 30, 1979

TOTALS FOR PENNSYLVANIA

TITLES	Total Candidates Assessed	Failures	NOCTI	Licensure	Credential Review	
Dental Assistant	4	1		4		
Dental Laboratory Technician	2			2		
Diesel	13	3				
Drafting Occupations	5					
Drafting, Mechanical	3		3			
Electrical Construction/Maintenance	4					
Electrical, Industrial	3	2	3			
Electrical Occupations	8	2	8			
Electro-Mechanical Technology	1				1	
Electronics	11	8				
Electronic Communications	1			1		
Fabric Maintenance Services	1				1	
Foundry	1				1	
Graphic Arts	6	3	6			
Health Assistant/Medical Assistant/NA	12			12		
Heating	3					
Heavy Equipment/Construction	2				1	
Horticulture	2				2	
Machine Shop	18	7	18			
Masonry Occupations	3					
Materials Handling	1					
Mechanical Technology	1					
Medical Assistant	1			1		
Medical Lab Assistant	2			2		
Sub-Totals - Page 2	108	26	38	22	6	

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O. C. E. P. ADMINISTRATION FREQUENCY

FROM July 1, 1978 TO June 30, 1979

TOTALS FOR PENNSYLVANIA

TITLES	Total Candidates Assessed	Failures	NOCTI	Licensure	Credential Review	
Military Science	2			2		
Millwork/Cabinetmaking	4	1	4			
Nurses Aide	1			1		
Painting and Decorating	2					
Plumbing	4	2	4			
Power Sewing	2					
Quantity Foods	11	1				
Radio/TV	4					
Refrigeration	1					
Restaurant Practice	3					
Sheet Metal	6	1	5			
Small Engine Repair	2					
Tailoring	3				1	
Textile Production/Fabrication	7					
Tool and Die Making	1					
Upholstering	2					
Waiter/Waitress	3					
Warehousing	2					
Welding	20	12				
Mine Equipment Maintenance	1				1	
Sub-Totals - Page 3 36	81	17	13	3	2	

Table IV

THREE YEAR AVERAGES

Institution	Candidates Assessed	Tests Administered	Failures	Licensure	Oral Examination
The Pennsylvania State University	98	80	14	15	3
Temple University	159	119	33	22	18
University of Pittsburgh	108	81	27	24	3
Indiana University of Pennsylvania	4	---	--	3	1
TOTALS	369	280	74	64	25

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OCCUPATIONAL COMPETENCY ASSESSMENT PROGRAM FOR PENNSYLVANIA
FOR PERIOD JULY 1, 1976 THROUGH JUNE 30, 1979

Institution	Total Candidates			Total Tests			Failures			NOCTI Tests			Licensure			Oral Examination		
	FY-77	FY-78	FY-79	FY-77	FY-78	FY-79	FY-77	FY-78	FY-79	FY-77	FY-78	FY-79	FY-77	FY-78	FY-79	FY-77	FY-78	FY-79
The Pennsylvania State University	100	110	83	84	77	78	9	17	15	30	43	38	15	27	4	1	6	1
Temple University	190	130	156	141	87	128	43	20	36	78	40	60	21	24	20	28	19	8
University of Pittsburgh	125	85	114	80	66	96	25	19	37	30	28	51	41	16	14	4	3	4
Indiana University of Pennsylvania	---	---	4	---	---	---	---	---	---	---	---	---	---	---	3	---	---	1
TOTALS	415	325	357	305	230	302	77	56	88	138	111	149	77	67	41	33	28	14

Tests Administered Failure Rate

FY - 77 $\frac{77}{305}$ = 25.2%

FY - 78 $\frac{56}{230}$ = 24.3%

FY - 79 $\frac{88}{302}$ = 29.1%

NOCTI - % of Tests Administered

FY - 77 $\frac{138}{305}$ = 45.2%

FY - 78 $\frac{111}{230}$ = 48.3%

FY - 79 $\frac{149}{302}$ = 49.3%

Table III

Table V

CURRENT NORM VALUES

Table V

Occupational Area		WRITTEN PERFORMANCE Mean	S.E.	Cut-off	PERFORMANCE Mean	S.D.	Cut-off	PERFORMANCE Mean	S.E.	Cut-off
Air Conditioning	148	68.2	0.7	67.5	82.6	14.7	67.9	82.6	1.3	81.3
Appliance Repair	10	56.8	4.7	52.1	77.0	10.2	66.8	77.0	--	--
Architectural Drafting/ Design Technology	34	65.9	1.6	64.3	74.6	21.2	53.4	74.6	3.6	71.0
Audio-Visual Communications Technology	9	64.4	5.1	59.3	78.0	0	78.0	78	--	--
Auto Body Repair	12	64.4	6.0	58.4	66.6	23.3	43.3	66.6	9.5	57.4
Auto Mechanics	604	65.4	0.4	65.0	78.2	15.5	62.7	78.2	0.6	--
Brick Masonry	49	68.5	5.2	63.3	70.9	8.0	62.9	70.9	2.8	68.1
Business Machine Maintenance	--	--	--	--	--	--	--	--	--	--
Building Const./Occupations	30	59.9	5.6	54.3	80.6	8.6	72.0	80.6	3.2	77.4
Building Trades Maintenance	8	62.8	4.4	58.4	84.9	10.2	74.7	84.9	4.2	80.7
Cabinetmaking/Millwork	83	60.2	1.1	59.1	78.8	7.2	61.6	78.8	2.1	76.7
Civil Technology	11	51.7	3.8	47.9	72.2	25.8	46.4	72.2	9.1	63.1
Carpentry	394	73.1	0.5	72.6	66.0	20.4	45.6	66.0	1.1	64.9
Commercial Art	10	59.6	5.1	54.5	76.8	0.2	76.6	76.8	--	--
Computer Technology	12	69.2	2.4	66.8	91.3	8.1	83.2	91.3	2.3	89.0
Diesel [illegible]	27	54.1	5.5	48.6	89.1	5.6	83.5	89.1	2.3	86.8
Drafting Occupations	7	48.5	5.4	43.1	89.0	14.0	75.0	89.0	8.1	80.9

Occupational Area		WRITTEN			PERFORMANCE			PERFORMANCE		
		Mean	S.E.	Cut-off	Mean	S.D.	Cut-off	Mean	S.E.	Cut-off
Electrical Const./Maintenance	--	--	--	--	84.0	0	84.0	84.0	--	--
Electrical Occupations	155	54.1	0.7	53.4	72.4	20.2	52.2	72.4	1.6	70.8
Electronics	32	66.9	5.5	61.4	77.1	10.4	66.7	77.1	3.5	73.6
Environmental Control Tech.	--	--	--	--	--	--	--	--	--	--
Graphic Arts (Printing)	111	51.7	1.0	50.7	77.8	14.6	63.2	77.8	1.4	76.4
Heating	7	62.1	4.3	57.8	91.0	11.3	79.7	91.0	6.5	84.5
Industrial Electricity	61	69.2	1.4	67.8	80.8	13.2	67.6	80.8	1.7	79.1
Instruments, Maintenance, Repair	--	--	--	--	--	--	--	--	--	--
Machine Shop	318	58.1	0.5	57.6	67.9	19.5	48.4	67.9	1.1	66.8
Masonry Occupations	37	53.2	5.9	47.3	100.0	0	100.0	--	--	--
Materials Handling	12	68.9	5.4	63.5	88.4	0	88.4	88.4	--	--
Mechanical Draft./Design Tech.	196	73.1	0.7	72.4	76.2	15.7	60.5	76.2	1.2	75.0
Mechanical Technology	3	45.6	2.9	42.7	63.6	24.6	39.0	63.6	14.2	49.4
Metal Fabrication	10	56.2	4.9	51.3	--	--	--	--	--	--
Metalworking Occupation	--	--	--	--	--	--	--	--	--	--
Painting and Decorating	9	58.2	6.1	52.1	91.2	0	91.2	91.2	--	--
Plumbing	77	58.3	0.9	57.4	75.2	16.3	58.9	75.2	1.9	73.3
Power Sewing	9	58.1	6.4	51.7	88.5	0	88.5	88.5	--	--

Occupational Area		WRITTEN Mean	WRITTEN S.E.	WRITTEN Cut-off	PERFORMANCE Mean	PERFORMANCE S.D.	PERFORMANCE Cut-off	PERFORMANCE Mean	PERFORMANCE S.E.	PERFORMANCE Cut-off
Quantity Foods	50	65.9	6.1	59.8	84.5	5.6	78.9	84.5	1.5	83.0
Radio/Television	10	66.7	4.6	62.1	75.0	0	75.0	75.0	--	--
Refrigeration	7	64.5	5.2	61.3	--	--	--	--	--	--
Sheet Metal	28	67.8	2.2	65.6	80.7	17.8	62.9	80.7	3.6	77.1
Small Engine	19	73.6	4.5	69.1	86.5	3.5	83.5	86.5	--	--
Textile Production/Fabrication	15	56.5	6.0	50.0	72.3	12.9	59.4	72.3	4.3	68.0
Upholstering	--	--	--	--	--	--	--	--	--	--
Tool and Die Making	7	52.8	5.3	47.5	61.0	0	61.0	61.0	--	--
Welding	12	71.4	4.9	66.5	62.3	14.3	48.0	62.3	5.4	56.9
Baker	1				80.0	--	80.0	80.0		
Tailoring					82.0	1.0	81.0	82.0		

NOTE - NOCTI KR-20 and Std.

ATTACHMENT 1

OCE EXAMINER'S WORKSHOP

ATTACHMENT I

OCE EXAMINER'S WORKSHOP

The Pennsylvania State University
University Park, Pennsylvania

In Consortium With
University of Pittsburgh, Temple University,
and Indiana University of Pennsylvania

June 21-22, 1979

A workshop for persons serving as occupational competency evaluation examiner's was conducted at The Pennsylvania State University, University Park, PA on June 21-22, 1979. This workshop, one of many activities conducted in the continuing effort to improve the overall occupational competency evaluation program, was patterned after previous examiner workshops with certain modifications.

While the workshop was conducted at University Park, PA, it was the result of a coordinated activity involving University of Pittsburgh, Temple University, Indiana University of Pennsylvania, The Pennsylvania State University, and the Bureau of Vocational Education. Planning was continuous throughout the year, with details being finalized at quarterly policy meetings of the OCE coordinators from each of the four universities and the Bureau of Vocational Education.

It was decided quite early to limit the number of occupations to twenty and to schedule sixty examiners for attendance. This would permit us to schedule suitable meeting space and would insure maximum utilization of time. Experience with previous workshops of this nature show that we might expect better results by limiting participation.

The agenda was drafted at the December 1978 OCE coordinators meeting and the twenty occupations tentatively identified. As work progressed in developing the workshop, it was realized that a considerable number of examiners had not previously attended a workshop. The goal was then

changed, with the attendance geared to scheduling as many examiners as possible who had not previously attended regardless of the number of occupations represented.

Previous experience had shown that we would not be able to attract all examiners who should attend, therefore we proceeded to invite all persons identified. This numbered considerably greater than sixty, but as with previous workshops, we exhausted the list before reaching our attendance goal of 60, which then necessitated additional effort to attract the examiners.

When the attendance list was finalized, we found that 22 occupations were to be represented. The agenda and the occupational titles are shown on Appendix 1 and 2 with examiners who attended shown on Appendix 3.

The workshop was scheduled as late in June as possible, without conflicting with other scheduled activity, so that we might accommodate late school closings due to make-up days for snow conditions. It appears that a date between June 15 and 25 will accommodate the larger number of people. Our experience with this and previous years show that a firm date for activity of this type be assigned at an early time and that the date remain firm. Changes to accommodate some school calendar adjustments only result in disrupting planning of individuals and has been counter-productive in efforts to improve attendance. For every person accommodated, it appears that a greater number are hampered.

Notification of the workshop, Appendix 4 was mailed to examiners, whose names were submitted by each institution. A follow-up notification was mailed to those not responding in an effort to have as many attend as could meet the schedule. Based on responses, each university submitted additional names, made many telephone calls and exerted considerable effort

to fill their allotted spaces. Fifty-six persons were finally scheduled to attend, but fifteen of these failed to show. This was caused primarily by the gasoline shortage which occurred at the time the workshop was scheduled. Even by car-pooling, we still experienced people who were unable to obtain gasoline or were reluctant to chance fuel problems. We will have to devise a strategy to overcome this difficulty prior to the 1980 workshop.

Workshop Facilities

Facilities of the Penn State Conference Center were used for the workshop. Meeting room accommodations provided large individual tables for each occupational title. Full conference facilities such as a sound system, media aids, air conditioning, and generous space made the conduct of workshop activity considerably improved over previous workshops.

Housing

Housing for participants was made available in West Dorms, on campus, (same vicinity as the workshop). Each participant was authorized two nights lodging in a double room at $5.50 per night, to be paid through the workshop funding. Participants could use single accommodations at $1.20 additional charge, to be paid by the participant. Arrangements were made for family members to accompany the workshop participants, with housing costs a responsibility of the participant. Several persons took advantage of this. Workshop participants were also given the option of securing off-campus accommodations at their expense and receiving a $5.50 per night reimbursement ($11.00 maximum) upon presenting their motel receipt. A small number of persons used off-campus facilities. Use of the dormitories on campus was well received by participants and is recommended for future workshops.

Meals

Each participant was responsible for their own meal requirements. Campus eating facilities at the Kern Graduate Center cafeteria and the Hetzel Union Building Terrace Room were recommended. They were close to campus housing and offered a variety of nourishing food at nominal cost. Participants were reimbursed for meals via their expense voucher submitted following the workshop.

This method of meal accommodation permitted flexibility for participants and reduced involved processes of meal tickets, schedules, etc. It was controlled by setting dollar limits and briefing participants on their responsibility.

Parking

Campus parking is rigidly controlled at University Park. The Conference Center parking area was assigned for parking for participants and was adequate. Difficulties encountered the previous year, in which one conference activity monopolized parking to the detriment of other conferees did not materialize. Corrective action by the Conference Center was effective.

Registration

Workshop participants registered for housing at Waring Hall in the West Dormitory area, as they arrived on Sunday afternoon and evening. A welcoming letter, Appendix 5, along with local and campus information was given to participants as they arrived.

Workshop registration was completed at the Conference Center registration desk under the direction of Mr. Robert Beam. Three secretaries from the Division of Occupational and Vocational Studies, were able to process all persons in an orderly fashion and without difficulties.

NOCTI National Seminar

The annual NOCTI National Seminar was hosted by Pennsylvania on June 20-21, 1979 with sessions conducted at The Pennsylvania State University. The Seminar was scheduled to permit state OCE representatives to also attend the Examiner's Workshop as a part of the Seminar schedule. Participants and the states they represent are shown on Appendix 6.

Seminar participants attended the first half day of the Examiner's Workshop and were given an opportunity to observe and discuss issues with individual examiners as well as to become better acquainted with the test instruments. The workshop agenda was developed to accommodate this activity and appeared to meet the goals established. Seminar participants were provided a package of reference material relative to the Pennsylvania OCE program to serve as a reference in their home state program. Comments of participants and examiners were favorable for this activity.

Program

The program developed at the December and March Coordinators meetings was followed with minor modifications, (Appendix 1). Both Pennsylvania and NOCTI tests were used; NOCTI test materials for examiners where NOCTI tests are being used and Pennsylvania tests for examiners in which these titles are being used. All Pennsylvania tests had been transferred to NOCTI in May, 1979, and this gave examiners an opportunity to become familiar with the changed format.

Security

Security of test materials required that each examiner sign for testing materials that were to be used. These were not permitted to be removed from the workshop location and were inventoried when returned. The workshop location was under constant surveillance or was locked when activity was

not scheduled. Provisions for security were considered adequate, as all material was returned to files.

This part of the workshop required two secretaries to sign-out material and account for it at the completion of the workshop. Use of two people was necessary to prevent delay in the start of activity.

Examiners for each title represented were grouped at separate tables. Each group was asked to identify a key person or team leader and to use his or her examination materials as the master set, to be returned with comments from the group. Comments were made directly on testing materials to ease control of documents.

Written Examination

Examiners were asked to review the written examination in its entirety and to identify changes that should be considered. Consideration was to be given to the overall content by occupational categories and proportioning, grammar, editing, currency, technological adequacy, and any other comment that might improve the product. Since time was limited for this activity, examiners were asked to assign sections of the test to different individuals so that the total test might be reviewed.

Guidelines for test review that had been developed prior to the workshop were used for the first time and appeared to assist in the review process. Guidelines are shown on Appendix 7.

Performance Test

The greater time was used to review and discuss the performance examination since this is exclusively administered by the examiner. (Written tests are centrally administered by each university).

Mr. Gerald W. Funk, Penn State, covered the workshop orientation and test development, and Dr. Ray Klein conducted the NOCTI part of the

sessions. Presenters as shown on the agenda participated in the NOCTI seminar activity and were unable to remain for the second day of the examiner's workshop. Because of this, these presentations were conducted by Mr. Funk. Considerable time was used in developing a rationale for evaluation and those elements considered important in the evaluation process. Dr. Ray Klein, NOCTI Industrial Psychologist, discussed statistical data and studies as well as development of evaluation criteria. Presenters worked with individual occupational groups throughout the workshop, to assist in greater understanding of the program and the role of the examiner.

By reviewing the examination, each examiner was expected to become more familiar with the product. They were given an opportunity to discuss examining practices with other examiners of the same occupation, as well as to ask questions and obtain clarification on individual items or situations of difficulty. Standardization was expected to be enhanced through this process along with the presentations on standardized examining practices.

The review process included evaluation of 1) applicability of each job, 2) the description of the candidate's instructions, as well as similar instructions, considerably expanded for the examiner, 3) itemizing tools, equipment and materials needed for each job, 4) consideration of time allowed, and 5) scoring factors and score for each in relation to the other scoring factors for the job and in relation to the total examination.

Review of the examination was intended to permit each examiner to become familiar with parameters shown above and to develop a degree of standardization for each job in each examination. We would expect that exposure to conditions and requirements at different examining points, as well as skill and understanding of different examiners would provide that

leveling necessary for standardization. We would also expect an improvement in the parameters for each job which would result in overall test improvement.

Varying comments were submitted by the different groups, with some being more complete than others. Sufficient comment was received from each group to permit improvement in the overall program.

Summary

Comment from examiners would indicate that the workshop was needed. Input from each of the groups will be used to update examinations, as necessary. Comment will become part of each examination maintenance file, to be used by content persons improving testing instruments.

We might expect improvement in examining practices, in the relationship of examiner to examinee, a better understanding of examination details and in improved reporting. Consideration of these factors alone would indicate attainment of workshop goals and when added to the data submitted on the conditioning of individual examinations would indicate a successful workshop.

APPENDIX 1

EXAMINER'S WORKSHOP AGENDA

OCCUPATIONAL COMPETENCY EXAMINER'S WORKSHOP

June 21 and 22, 1979

Thursday, June 21, 1979

8:00 - 9:00	Registration - Keller Conference Center - PSU
9:00 - 9:10	Welcome - Dr. Frederick Welch
9:10 - 9:30	Introductions - OCE Orientation - Gerald W. Funk
9:30 - 9:45	Recent Changes in Test Bank Status - Gerald W. Funk
9:45 - 10:00	Break
10:00 - 10:20	Overview to Pennsylvania Test Development - Gerald W. Funk
10:20 - 10:40	Test Administration - Dr. Jon Hunt
10:40 - 11:00	Issues - John Lipps
11:00 - 12:00	NOCTI Research and Development Studies - Dr. Ray Klein
12:00 - 1:00	Lunch
1:00 - 1:30	Examiner - Candidate Relationships - Dr. Thomas O'Brian
1:30 - 2:15	Review Written Examinations - Gerald W. Funk
2:15 - 2:30	Break
2:30 - 3:00	Instructions for Administering Performance Examinations - Dr. Jon Hunt
3:00 - 4:00	Review Performance Examinations - Dr. Thomas O'Brian

Friday, June 22, 1979

9:00 - 10:00	Performance Evaluation - Dr. Thomas O'Brian
10:00 - 10:15	Break
10:15 - 11:00	Statistics and Evaluation - NOCTI - Dr. Ray Klein
11:00 - 12:00	Review Performance Test - John Lipps
12:00 - 1:00	Lunch
1:00 - 2:00	Review Outstanding Sections of Test - Gerald W. Funk
2:00 - 2:15	Break
2:15 - 3:30	Prepare Reports and Recommendations - Dr. Jon Hunt
3:30 - 4:00	Wrap-Up, Turn in Materials - Gerald W. Funk

APPENDIX 2

EXAMINATION TITLES FOR EXAMINER'S WORKSHOP

EXAMINATION TITLES FOR EXAMINER'S WORKSHOP

June 21-11, 1979

1. Air Conditioning/Refrigeration
2. Architectural Design Technology
3. Auto Body Repair
4. Auto Mechanics
5. Brick Masonry
6. Building Construction Occupations
7. Building Trades Maintenance
8. Carpentry
9. Diesel Mechanics
10. Drafting Occupations
11. Electrical Occupations
12. Electronics
13. Graphic Arts
14. Law Enforcement
15. Machine Shop
16. Millwork/Cabinetmaking
17. Plumbing
18. Quantity Foods
19. Sheet Metal
20. Small Engine Repair
21. Textile Production/Fabrication
22. Welding

APPENDIX 4

EXAMINER'S WORKSHOP LETTER OF NOTIFICATION

THE PENNSYLVANIA STATE UNIVERSITY
COLLEGE OF EDUCATION
Division of Occupational and Vocational Studies
RACKLEY BUILDING
UNIVERSITY PARK, PENNSYLVANIA 16802

Each year, we conduct a two-day workshop on the Penn State campus at University Park for occupational competency examiners throughout the state. To date we have had 218 examiners attend the workshop. As a part of OCE program improvement efforts our goal is to have 100% examiner participation at the workshop with attendance at least once each five year period or when an examination is revised.

Information available indicates that you are now, or will be, serving as an examiner for the university servicing your region of the state. We would like to meet our goal and invite your attendance and participation in the workshop which is being held on June 21 and 22 this year. Your travel expenses, lodging on campus, and meals will be reimbursed and we will be able to pay you a $50 honorarium ($25/day) for the two days of the workshop. We will meet in the Keller Conference Center, which provides us with a modern, air conditioned and media equipped facility conducive to maximum participation.

The OCE coordinators from Temple University, University of Pittsburgh, Indiana University of Pennsylvania, and The Pennsylvania State University will be presenting pertinent topics along with Bureau of Vocational Education and National Occupational Competency Testing Institute (NOCTI) participation and input. We also expect Bureau of Certification participation as well as key OCE persons from other states. There are many people requesting attendance each year, however, first priority goes to our examiners.

Would you please complete and return the attached form at your earliest convenience, indicating your plans to attend. We will mail full details at a later date to all who plan to be at the workshop.

Respectfully,

Gerald W. Funk

Gerald W. Funk
Pennsylvania Coordinator of
Occupational Competency Assessment

GWF:ml

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Attachment

Please complete and mail this form to:

Gerald W. Funk
Division of Occupational and Vocational Studies
The Pennsylvania State University
110 Rackley Building
University Park, PA 16802

PLEASE PRINT

Name (Home Address) Number and Street

City County State Zip Social Security No.

Home Telephone Business Telephone Position

Institution (Address) Number and Street

City State Zip

CIRCLE APPLICABLE WORD(S)

I (do do not) plan to attend the OCE Examiner Workshop at The Pennsylvania State University, University Park, PA, June 21 and 22, 1979.

I will require a (single) (double) room for the evening/s of Wednesday, June 20 / Thursday, June 21 / Friday, June 22.

I will arrive at approximately _____ (time) on _____ (date).

I will check out at approximately _____ (time) on _____ (date).

I will make my own commercial accommodations: Yes _____ No _____.

I will require accommodations for _____ spouse and _____ children.

APPENDIX 5

EXAMINER'S WORKSHOP WELCOMING LETTER

OCCUPATIONAL COMPETENCY EXAMINATION WORKSHOP

EXAMINER'S WORKSHOP

J. Orvis Keller Conference Center
The Pennsylvania State University

June 21 and 22, 1979

WELCOME -- to the 1979 OCE Examiner's Workshop!

We should like to make your attendance enjoyable as well as profitable. Professional development is considered a key element as well as improved standardization of examining practices across the state. You will find examiners in your occupation from areas administered by Temple, Penn State and the University of Pittsburgh. Indiana University of Pennsylvania (IUP) is a test center and will participate in this workshop, however University of Pittsburgh examiner's provide service for IUP at this time. Through discussion and sharing of ideas, we believe that the total OCE Program will improve to the benefit of all concerned.

We plan to review both the written and the performance examinations, with the preponderance of time used on the performance examination. The examinations will be reviewed in their entirety and you will have an opportunity to selectively review and comment on specific areas. You will have an opportunity to prepare draft material that may be used to improve examination effectiveness. Guidelines are included in your workshop packet and you will be provided directions in each of the presentations. If you have questions, please make them known to a monitor from one of the sponsoring institutions so that you may gain maximum production from your efforts.

Coffee breaks are scheduled for both Thursday and Friday (see agenda), and will be in the lower level of the Conference Center. Lunch is scheduled for 12:00 to 1:00 p.m. each day, with each person responsible for his/her requirements. The Kern Graduate Center cafeteria is suggested for lunch, since it is across the parking lot from the Conference Center.

We will be using examinations from the National Occupational Competency Testing Institute (NOCTI), as well as Pennsylvania developed examinations. Processes and examining practices for both sets of materials will be presented. It is important that you be familiar with NOCTI requirements as all of the Pennsylvania examinations were transferred to NOCTI in May of this year. The same processes of evaluation apply to all testing, with the performance evaluations changed to the NOCTI format.

Presentations and work sessions will focus on common problems in examining practices. Comments will be solicited and you will have an opportunity to ask questions. You will also have the opportunity to share suggestions with the entire group in an effort to improve examining practices.

We should also like to provide time on Friday afternoon to wrap-up work from the workshop and to prepare and submit your written comments and suggestions for program effectiveness.

Your participation in this workshop is recognized by many persons as representing a sincere dedication to your profession. It is through efforts such as yours, that advances may be made for the benefit of vocational education.

Thank you for participating.

Bureau of Vocational Education
The Pennsylvania State University
Temple University
University of Pittsburgh
Indiana University of Pennsylvania

GWF:ml

APPENDIX 6

NOCTI WORKSHOP PARTICIPANTS

NATIONAL OCCUPATIONAL COMPETENCY TESTING INSTITUTE WORKSHOP

Nittany Lion Inn
The Pennsylvania State University

June 20-21, 1979

Bush, Sylvia
8449 N. Laramie
Skokie, IL 60077

Cliett, Travis
Mississippi State Department of
Education
P. O. Box 771
Jackson, MS 39205

Culnon, George
5205 Church Drive
Charleston, West Virginia 25306

Dixie, Theodore
Alabama A & M University
P. O. Box 16
Normal, Al 35762

Eddy, Max
311 Industrial Education Building
Purdue University
W. Lafayette, IN 47907

Eschenmann, Kurt
Virginia Polytechnic Institute
and State University
305 Lane Hall
Blattsburg, VA 24061

Flack, Gerald
M.S.D., Washington Township
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Indianapolis, IN 46240

Gilmore, Charles (No Show)
Department of Education
Division of Higher Education
Box 911
Harrisburg, PA 17126

Klein, Raymond
Marjorie Drive
Albany, NY 12206

Lindsey, Bryant
1300 Somerset Road
Raleigh, NC 27610

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Manton, Douglas
728 Newland Street
Jackson, MS 39211

Meis, Ruby L.
324 W. Forest Avenue
Apartment 1
Ypsilanti, MI 48197

Moses, Joan
910 Mitchell Drive
Huntsville, AL 35805

Nasman, Leonard
R. D. #1, Happy Acres
Argyle, TX 76226

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Northern Kentucky University
Highland Heights, KY 41076

O'Reilly, Patrick
Virginia Polytechnic Institute and
State University
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Blattsburg, VA 24061

Padelford, Harold (Harry)
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University of Minnesota
Duluth, MN 55812

Rinas, Robert
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Vocational and Technical Education Department
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New Britain, CT 06050

Ruehl, Philip
University of Wisconsin
Menomonie, WI 54751

Schaw, Alfred (No Show)
New York Institute of Technology
Wheatley Road
P. O. Box 170
Old Westbury, NY 11568

Stebbins, Charles
State Department of Education
Division of Trade and Technical Education
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Albany, NY 12230

Whitener, Scott D.
Michigan Occupational Competency Assessment Center
309 Johnson Hall
Ferris State College
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Pennsylvania Participants

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Funk, Gerald W.
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Dr. Jon Hunt
Department of Vocational Education
Ritter Annex
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Philadelphia, PA 19122

Kulac i, Mehmet
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University Park, PA 16802

Lipps, John
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4K03 Forbes Quadrangle
University of Pittsburgh
Pittsburgh, PA 15260

O'Brian, Thomas
Vocational Personnel Program
148 Whitmyer Hall
Indiana University of Pennsylvania
Indiana, PA 15701

Welch, Frederick G.
103 Rackley Building
Division of Occupational and Vocational Studies
The Pennsylvania State University
University Park, PA 16802

Whyte, Edward T.
110 Rackley Building
Division of Occupational and Vocational Studies
The Pennsylvania State University
University Park, PA 16802

Wircenski, Jerry L.
110 Rackley Building
Division of Occupational and Vocational Studies
The Pennsylvania State University
University Park, PA 16802

APPENDIX 7

GUIDELINES FOR REVIEW OF NOCTI EXAMS

GUIDELINES FOR REVIEW OF NOCTI EXAMS

Technological developments, coupled with changes in trade practices, result in the need to periodically review, and possibly update, NOCTI exams. So that each reviewer may proceed with this task in a similar manner, the following criteria should be applied when making judgments regarding what should be removed, added, or modified.

REMOVED

Items or jobs which are no longer found in general practice (found in less than 25 percent of the trade).

ADDED

Items or jobs which are gaining acceptance in at least 25 percent of the trade.

MODIFIED

Changes within existing items or jobs which correct inaccuracies, improve clarity, increase precision, or reflect current practice more appropriately.

When an item or job meets one or more of these criteria, the following steps should be taken:

1. Identify the item by test occupation, item number, and page number.
2. State briefly the nature of the problem with the item.
3. Describe fully the recommended change. The new item should be presented in the exact form that it is to appear on the test.
4. State how the replacement item tends to improve the exam. For example: What knowledges, understandings, or skills are tested by the new item?
5. A multiple-choice format, offering four responses per item, is required for written test items.

6. Where jobs are being recommended for a performance test, the following details are also needed:
   A. Description of job to be accomplished.
   B. Criteria for determining:
      i. The processes used (at least four)
      ii. The results achieved (at least four)
   C. A value for each criterion on a five-point scale (5-25)
   D. List of materials required.
   E. List of tools and equipment needed.
   F. If a technical drawing is needed, it should be included.
   G. Any special instructions needed by the evaluator for set-up or test administration.
7. When a job is being replaced, the substitute task should come as close to the original task as possible, in terms of time required to accomplish the job, total point value, and costs for materials. The new task should test skills and understandings, of importance to the trade, which can only be perfected with years of experience in the occupation.

COMPETENCY VS. CURRENCY

When contemplating a change, it is important to keep in mind that certain practices, although current, may not be used widely in the field. Also, some practices which have been used for a long time may still be widely applied in the field. There are no hard and fast rules to apply here, although when in doubt, apply the 25 percent criterion. If in doubt, make a recommendation. Your recommendation will then be subjected to additional reviews at a later date.

INNOVATIVE APPROACHES

There will be times when some innovative approach to question formulation may be in order. When this occurs, the item(s) should be formulated and a justification given describing the benefits of the new approach. For example,

it may be possible to think of a job which could be substituted for one or more jobs. Efficiency and effectiveness are criteria that apply in these cases. The new item also might be constructed to measure characteristics not covered on the present exam but which are deemed essential.

It will be easier to implement changes which are formatted similarly to the original test items, but this should not preclude alternate approaches if their benefits appear to be great enough to justify the innovation.

When the reviews have been completed, all materials, including test booklets and recommendations, should be returned to:

Test Development Section
NOCTI
45 Colvin Avenue
Albany, NY 12206

ATTACHMENT II

DUTIES AND RESPONSIBILITIES
OCCUPATIONAL COMPETENCY EVALUATION COORDINATOR

DUTIES AND RESPONSIBILITIES

OCCUPATIONAL COMPETENCY EVALUATION COORDINATOR

1. File signature with the Director of Teacher Certification, Bureau of Certification. (par. III B (3), Policies and General Procedures Relating to the Certification of Vocational Teachers in Pennsylvania).

   Requirement for the following is contained in the Pennsylvania Policy Manual for Administration of the Occupational Competency Assessment Program for Vocational Instructional Certification Candidates and Vocational Intern Candidates.

2. Prepare and disseminate, as necessary, an OCE brochure of instructions for candidates.

3. Accept applications from prospective candidates.

4. Review applicant credentials.

5. Counsel all applicants

   a. assessment procedure
   b. formal application
   c. appropriate fee
   d. scheduled testing
   e. documents
      (1) education
      (2) work experience
      (3) occupational licenses

6. Maintain secure inventory of state examinations and related documents. Confidentiality and prevention of compromise is paramount.

7. Order required examinations and documents from the State OCE Coordinator.

8. Administer the written examination.

9. Arrange for cost free facilities and equipment for performance testing.

10. Maintain current list of examiner's and status of in-service examiner training.

11. Participate in performance examiner training workshops.

12. Engage examiners for testing.

13. Notify candidates of time, place and other details of scheduled testing by first class mail.

14. Review examiner's reports of performance testing.

15. Determine candidate pass/fail by evaluating written and performance test scores in relation to statistical data and examiner's recommendation.

16. Notify failed candidate, in writing, of failure, to include diagnostic report of strengths and weaknesses and recommended corrective action if failed candidate should desire retesting.

17. Counsel failed candidate through personal counseling period.

18. Provide diagnostic report of strengths and weaknesses to passing candidate, if requested.

19. Arrange payment of each examiner, reimburse supplies, etc.

20. Maintain continuous detailed records of costs to be submitted annually to the Bureau of Vocational Education for cost analysis study of statewide program.

21. Submit annual report to Bureau of Vocational Education on applications, persons tested, type assessment, pass/fail, etc.

22. Represent university at state and national occupational competency meetings, seminars, etc.

23. In absence of approved testing instruments, organize and chair oral examination committee. Must include one occupational incumbent of journeyman level.

24. Accept appeals of failed candidates and resolve action pertaining thereto.

25. Order NOCTI tests from NOCTI and arrange financial transactions.

26. Arrange and host OCE Consortium meeting at least once annually and attend quarterly meetings of Consortium.

27. Participate in determining and recommending test development.

28. Participate in recommending OCE policy to state director of Vocational Education.

29. Forward completed candidate optical scan sheets to the State OCE Coordinator for development of annual report of normative data subsequently used for state norms.

30. Forward completed summary sheet of candidate performance scoring to the State OCE Coordinator for development of annual report of normative data subsequently used for state norms.

ATTACHMENT III

PERSONNEL RESPONSIBILITY

OCE ENQUIRY - APPLICATION

1.	Initial contact - Secretary	:10
2.	Initial appointment with coordinator - Coordinator	1:00
3.	Mail application, forms - Secretary	:15
4.	Receive application, prepare file - Secretary	:10
5.	Receive, deposit and account for fees - Secretary	:15
6.	Compile complete data, send follow-up correspondence - Secretary	1:00
7.	Review file for completeness - Secretary	:20
8.	Schedule and proctor pre-test and candidate experience checklist completion - Secretary	1:00
9.	Score pre-test and prepare full file for coordinator/ candidate interview - Secretary	:30
10.	Candidate interview - Coordinator	2:00
11.	Order NOCTI examinations - Secretary	:10
12.	Order Pennsylvania examinations - Secretary	:10
13.	Schedule testing - Secretary, Coordinator	:15
14.	Prepare written testing package - Secretary	:15
15.	Prepare performance testing package and mail - Secretary	:30
16.	Notify candidate of examination schedule, provide instructions, maps, etc. - Secretary	:30
17.	Proctor written test - Coordinator	4:00
18.	Coordinate performance test - Coordinator	10:00
19.	Score written exam - Secretary	:15
20.	Diagnostic review - Coordinator	:15
21.	Receive performance results - Secretary	:10
22.	Review performance results - Coordinator	:30
23.	Determine pass-fail and written report - Coordinator	1:00
24.	Notify candidate - Secretary	:15
25.	Prepare certificate - Secretary	:05
26.	Prepare honorarium requests for examiners - Secretary	:10
27.	Prepare payment for consumable supplies	:15
28.	Failed Candidate -	
	Prepare file - Secretary	1:00
	Interview candidate - Coordinator	1:00
	Follow-up interview(s) - Coordinator	:30